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JUN 13 2007

AMENDMENTS TO THE DRAWINGS:

The drawings have been amended in accordance with the following particulars (as indicated on the attached ANNOTATED SHEETS and REPLACEMENT SHEETS for figures 4, 5, 7 and 8):

In FIG. 4:

The arrow from the storage unit 3211 to the counting unit is reversed.

The storage unit 3211 is amended to include plural sets of polarity data and the corresponding PAC signals.

The operation unit 3212 is amended to include an adder 32121 and a control circuit 32122 which can perform an inner product operation and generate a sum of coupling voltages.

In FIG. 5:

The description in steps S501-S504 is corrected to meet with the amended specification.

In FIG. 7:

The storage unit 3211 is amended to include plural sets of polarity data and the corresponding PAC signals.

The operation unit 3212 is amended to include an adder 32121 and a control circuit 32122 which can perform an inner product operation and generate a sum of coupling voltages.

REMARKS

Applicants have amended the specification, claims and drawings in order to more particularly define the invention taking into consideration the outstanding Official Action. Reconsideration of this application is respectfully requested in view of the foregoing amendments and the following remarks:

Response to Drawing Objections

The objection to the drawings has been addressed by amending the drawings to show the features listed in item 3 on page 5 of the Official Action, and to ensure that the drawings are consistent with the original specification as required in item 4 on pages 5-6 of the Official Action. As is apparent from the annotated sheets, the changes involve labeling, in accordance with the original specification, of the various elements illustrated in the original drawings and not the addition of new elements. Therefore, the drawing changes clearly do not involve "new matter."

Response to Rejections Under 35 U.S.C. § 112

Claims 1-4, 6-8 and 10-12 were rejected under 35 U.S.C. § 112, first paragraph, on the grounds that the limitation of "the operation unit is operative to perform an inner product operation..." was not enabled by the disclosure. In reply, the Applicant respectfully submits that the inner product operation is fully described in the paragraph bridging pages 6 and 7 of the specification. As described, the operation unit 3212 is adapted to receive display data representing a voltage vector of no polarity in which the larger of the value of display data the closer

the sum of coupling voltages of one set of polarity data is smaller than the predetermined value, the corresponding PAC signal of the polarity data is outputted to the data driver; or

- the sums of coupling voltages of all sets of polarity data are compared with each other so as to choose the polarity data having a smallest sum of coupling voltages and the corresponding PAC signal for output,
- thereby obtaining an optimum polarity arrangement, decreasing cross-talk, and improving display quality.

In particular, the Takeda patent discloses a method involving *accumulation and subtraction of the signal levels of pixel data for odd-numbered lines and even-numbered lines* to generate an alternation signal for changing the voltage polarity applied to the liquid crystal layer, rather than the claimed method involving *determining the optimum polarities of display data based on the sum of coupling voltages*.

The Takeda patent discloses a liquid crystal display device having a plurality of pixels arranged in the form of a matrix, with groups of the pixels being arranged in lines along respective gate signal lines. Takeda provides for accumulating both signal levels of pixel data for odd-numbered lines of the pixels and for even-numbered lines of the pixels separately in every frame period, obtaining a subtracted value obtained by subtracting one of the accumulated values of the signal levels from the other, and transmitting an alternation signal which changes the voltage polarity applied to a liquid crystal layer by modifying the phase thereof on the basis of the subtracted value. As a result, it can be seen that Takeda tries to suppress flicker appearing on a display screen primarily by accumulating and subtracting the signal levels of pixel data for odd-numbered lines and even-numbered lines to

generate an alternation signal for changing the voltage polarity applied to a liquid crystal layer. Such technique is different from the inventive feature of determining the optimum polarities of display data based on the sum of coupling voltages, i.e., generating a PAC signal with the sum of coupling voltages smaller than the pre-determined value, or generating a PAC signal with the smallest sum of coupling voltages among the sums of coupling voltages corresponding to all sets of polarity data.

According to the Examiner, element 102 (i.e., the serial/parallel conversion) of Takeda is analogous to the storage unit of the invention. However, the serial/parallel conversion 102 of Takeda is provided for receiving inputted display data 101 and classifying the display data into pixel data of odd-numbered lines and pixel data of even-numbered lines (column 6, lines 51-59), instead of storing a plurality of sets of polarity data and a plurality of PAC signals. Thus, it is respectfully submitted that the serial/parallel conversion of Takeda is different from the storage unit of the invention.

Further, the accumulator A103 and register A105 of Takeda are provided to accumulate and temporarily store signal levels of pixel data for odd-numbered lines of the pixels, and the accumulator B104 and register B106 are provided to accumulate and temporarily store signal levels of pixel data for even-numbered lines of the pixels (column 7, lines 17-25). Thus, these elements A103, A105, B104 and B106 are used to obtain signal levels by simply accumulating them, which is different from the operation unit of the claimed invention which receives the display data, the plurality of sets of polarity data, and a corresponding one of the PAC signals to perform an inner product operation for obtaining a sum of coupling voltages corresponding to each set of polarity data.

The Examiner is incorrect that Takeda further teaches that the operation unit comprises an adder 152 for performing an inner product operation with respect to each set of polarity data (figure 8). Instead, adder 152 of Takeda is actually provided to add respective outputs from the respective gray scale registers and outputs a signal corresponding to the added value (column 10, lines 13-15), and not to perform any inner product operation.

Finally, the subtracter 107 of Takeda is provided to perform a subtraction between the accumulated value stored in the register A105 and the accumulated value stored in the register B106 to output an alternation selector signal 116 when the subtracted value becomes equal to or more than a reference value (column 7, lines 40-48). Because the subtracted value is representative of difference between accumulated signal levels of odd- and even-numbered lines of pixels, and is totally different from the sum of coupling voltages, which is to be compared with a predetermined value by the comparison unit of the invention, it is clear that the subtracter of Takeda is also different from the comparison unit of the invention.


Therefore, the invention is not anticipated by the cited reference and withdrawal of the rejection under 35 USC 102e) is respectfully requested..

CONCLUSION

In view of the foregoing remarks, reconsideration and allowance of the application are now believed to be in order, and such action is hereby solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

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Date: June 13, 2007

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